

REMARKS

Claims 1-12 are pending in this application. No amendment is made in this Response.

Claims 1-12 are rejected under 35 CFR §103(a) as obvious over USPN 5,516,456 to Shinohara et al. in view of USPN 5,360,688 to Von Trebra et al. (Office action paragraph no. 2)

The rejection of claims 1-12 is respectfully traversed.

Shinohara discloses a liquid crystal display panel with an element that is made from a hydrogenated product of a polymer obtained by the ring-opening polymerization of a norbornene derivative, as disclosed in column 3, lines 15-43. The Examiner cites column 11, lines 50-56, as disclosing patterns of pigment compositions on the layer to make a color filter. The Examiner cites Von Trebra for the disclosure of inks with acrylic resins meeting the limitations of claim 5.

In the rejection, the Examiner substitutes the inks of Von Trebra for the pigments used in Shinohara, and states that the limitations of claim 1 regarding retention in a tape peeling adhesion test, and the index of wetting limitation of claim 3, would be inherent in the combination or would be achieved by routine optimization.

In traversing the rejection, Applicant first argues that these limitations of claims 1 and 3 are **not inherent** in the proposed combination of references. That is, the combination of Shinohara's polymer with Von Trebra's pigment/carrier will not necessarily meet the limitations of claims 1 and 3. Applicant demonstrates this point with the data presented in the attached Declaration under 37 CFR 1.132, by Teiji KOHARA, an engineer of Zeon Corporation.

The Declaration discloses the results of experiments in which the preparation process of Shinohara et al. was duplicated, and in which a light guide plate was prepared from a mixture of 100 parts by weight of the resulting alicyclic structure-containing polymer and 0.5 parts by weight of a phenolic antioxidant by injection molding. Specifically, 8-methyl-8-carboxymethyltetracyclo-[4.4.0.1^{2,5}.1^{7,10}]-3-dodecene and 1-hexene were polymerized as in Shinohara et al. (column 4, lines 24 and 35, and Synthetic Example 1 in column 14).

Experiments 3 and 4 of the Declaration disclose the preparation of inks based on Von Trebra et al. in column 6, lines 25-40, cited by the Examiner. In particular, ink B is a black ink containing carbon black in a cellulose acetate carrier, and ink D contains carbon black in an acrylic carrier.

Experiment 5 of the Declaration discloses that the whole surface of one side of the light guide plate was printed with each of the inks A to D containing Rutile-type titanium dioxide or Carbon black as a pigment and Cellulose acetate or Dipentaerythritol hexaacrylate (photo-cure type acrylic polymer) as a carrier (base resin). The drying and curing of the inks were conducted.

Experiment 5 therefore represents a combination of Shinohara's light plate (i.e., molded article) with Von Trebra's conventional inks.

Referring to Table 1 of the Declaration, the indexes of wetting were 46 dyn/cm for inks A and B, and 43 dyn/cm for inks C and D. Thus, in all four cases, the index of wetting of the ink layer containing the ink described by Von Trebra et al. on the molding formed from the alicyclic structure-containing polymer described by Shinohara et al. exceeds 42 dyn/cm, the upper limit in claim 3. **The index of wetting limitation of claim 3 is clearly not inherent in the proposed combination.**

Experiment 6 of the Declaration discloses that a corona discharge treatment was conducted on one surface of the light guide plate. The inks A to D were separately used to print a pattern composed of a plurality of white circular dots that the diameter of each dot gradually increases from the side of the thick-wall portion to the side of the thin-wall portion on the treated surface of the light guide plate by screen printing. The drying and curing of the inks were conducted.

Table 1 of the Declaration demonstrates that the observed values of the retention of the pattern were 0% for the inks A and B, 75% for the ink C and 77% for the ink D. Thus, in all four cases of a molding formed from the alicyclic structure-containing polymer described by Shinohara et al. and containing a pattern formed by the ink described by Von Trebra et al., the retention of the ink layer containing the pattern when a 1-cm² portion arbitrarily selected from the surface of the molding is subjected to a tape peeling adhesion is less than 80%, the lower limit of this parameter in claim 1. **The retention limitation of claim 1 is clearly not inherent in the proposed combination.**

The Examiner has also argued that “routine optimization” might yield the retention limitation of claim 1 or the index of wetting limitation of claim 3. Applicant respectfully disagrees. There is no suggestion in Shinohara et al. or Von Trebra et al. for “optimizing” the retention parameter or the index of wetting parameter. The parameters of “peeling adhesion” and “index of wetting” are not disclosed in Shinohara et al. or Von Trebra et al., and Applicant submits that the references do not recognize the importance of these parameters. The reference cannot suggest “routine optimization” of a parameter when the parameter itself is not mentioned.

In addition, the combination of the present invention produces other advantages not suggested by the cited combination.

According to the results of Experiment 7 in the Declaration, the molding formed from the alicyclic structure-containing polymer, on the surface of which a pattern has been formed by the ink, and wherein the retention of the ink layer containing the pattern when a 1-cm² portion arbitrarily selected from the surface of the molding is subjected to the tape peeling adhesion test is lower than 80%, is markedly lowered in optical properties (luminance) in the long-time high-temperature and high-humidity test. This may be contrasted with the results in Examples 1 to 4 of the present application, in which there is only a small reduction in luminance. This effect of the present invention is unsuggested by the cited references.

Applicant therefore submits that claims 1-12 are novel and non-obvious over Shinohara et al. and Von Trebra et al., taken separately or in combination.

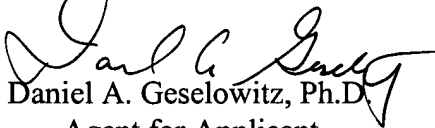
U.S. Patent Application Serial No. 10/030,134
Response dated March 21, 2005

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP


Daniel A. Geselowitz, Ph.D.
Agent for Applicant
Reg. No. 42,573

DAG/nrp:plb
Atty. Docket No. 020085
Suite 1000
1725 K Street, N.W.
Washington, D.C. 20006
(202) 659-2930



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Enclosures: Declaration Under 37 CFR 1.132
Petition for Extension of Time

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